Reference B: Definitions

2-Digit-Year Format A format that provides a year date as two digits only to represent a year within a specific century. The two high-order digits of the year are truncated; for example, 1995 is represented as 95, and 00 represents years ...1800, 1900, 2000.... This is normally represented by the format (YY).

4-Digit-Year Format A format that provides a year date as four digits: the two high-order digits represent the century and the two low-order digits represent the year within the century. For example, 1995 represents the year 1995; 2895 represents the year 2895. This is normally represented by the format (CCYY).

Application A computer program designed to help people perform a certain type of work. Depending on the work for which it was designed, an application can manipulate text, numbers, graphics, or a combination of these elements.

Architecture A description of all functional activities to be performed to achieve the desired mission, the system elements needed to perform the functions, and the designation of performance levels of those system elements. An architecture also includes information on the technologies, interfaces, and location of functions and is considered an evolving description of an approach to achieving a desired mission.

Bridge A routine that expands or contracts batch data files to reconcile data format differences between expanded and unexpanded data stores in a Year 2000 Project.

Business Resumption Plan HUD's plan for responding to the loss of system use due to a disaster such as a flood, fire, computer virus, or major software failure.

Calendar Date A representation composed of the time elements: Year, Month-of-Year, and Day-of-Month. The Gregorian calendar is the commonly adopted calendar of business and commerce. There are several format variations for Calendar Date:

- ➤ NIST standard is YYYY-MM-DD,
- ➤ US convention is MM-DD-YYYY,
- ➤ European and Military convention is DD-MM-YYYY, and
- ➤ Mon-DD-YY and DD-Mon-YYYY are also recognized—but less familiar—conventions.

CCYY Format A 4-digit-year format that uses two century digits (CC) to indicate the century and two year digits (YY) to indicate the year within the century.

CCYYDDD Format A seven-digit-year format that uses two century digits (CC) to indicate the century, two year digits (YY) to indicate the year within the century, and three digits (DDD) to indicate the day (refer to Julian Date below).

Century A period of 100 consecutive years. The 21st century begins at 0000 hrs, 1 January 2001. However, for purposes of the HUD Year 2000 project, we are defining the 20th-21st century boundary to be between 2400 hrs, 31 December 1999 and 0000 hrs, 1 January 2000. This definition enables discussion of the 21st century to include all dates with a 20YY format inclusive of the year 2000. Therefore with this logic, the year 2100 is considered part of the 22nd century.

Century-Date Change The impending Year 2000 millennium change and its resulting impact and potential disruptions of business services, information databases, and applications systems. See also **Year 2000 Problem** and **Year 2000 Challenge**.

Century-Date Compliant Status of a given unit of software if it correctly handles comparisons, calculations, and sorts that use date data spanning both sides of the century boundary. The goal of a Year 2000 initiative is to achieve century-date compliance for all the software in the enterprise portfolio.

Certification The process of testing a given application or set of applications to determine if they correctly handle century dates. This process must be performed before assuming any application is century-date compliant. Certification is performed before migration activities for applications that are thought to be century-date compliant and is the final step of the validation process for noncompliant applications that have been migrated.

Component A single resource with defined characteristics. The component concept is used in defining precise specifications for testing the validity of various resources. These components are also defined by their relationship to other components.

Configuration Management The continuous control of changes made to a system's hardware, software, and documentation throughout the development and operational life of the system.

Conversion The process of making changes to databases or source code.

Data Dictionary A set of data descriptions that can be shared by several applications.

Day-of-Month Is represented by the ordinal numbers 01 through 31, representing the first through the thirty-first days.

Day-of-Week Can be expressed as the leading one or leading three characters in the names of the days of the week.

Day-of-Year Is represented by the ordinal numbers ranging from 001 (January 1) through 365 (or 366 in Leap Years) for December 31.

Debug With software, to detect, locate, and correct logical or syntactical errors in a computer program.

Defect A problem or bug, that if not removed, could cause a program to either produce erroneous results or otherwise fail.

Event Horizon The date by which renovation has to begin to avoid application failure. It needs to be determined to ensure there is enough renovation time remaining before the failure date.

Failure Date The first date on which the application will fail. This depends on the range of dates that have to be handled and any special coding techniques.

Fixed Window A technique to determine the century (high order digits) of a year when represented by two digits. The 2-digit year is compared against a hard-coded threshold. The century designation is limited to a 100 year-year range spanning only two centuries. For example, assume the threshold is 60, then if the 2-digit year is greater than or equal to 60, the year is in the 20th century; if the 2-digit is less than 60, the year is in the 21st century.

Gregorian Calendar Today's general use calendar of 12 months and 365 days that employs the current leap year algorithm. See also **Leap Year**.

Implementation The process of replacing one version of a software product with a later version. This Guide follows the definition of implementation used by the Year 2000 Inter-Agency Task Force. Implementation is the third step in the Year 2000 lifecyle: systems are renovated, tested, and then implemented. (See also **Renovation**.)

Note: The Year 2000 community is using this term in two different ways. The commercial sector and the media have broadened the term's scope to include changing, testing, and deploying the needed Year 2000 changes; this Guide separates these activities out as distinct and separate steps.

Integration Testing Testing to determine that the related information system components perform to specification.

Interface A boundary across which two systems communicate. An interface might be a hardware connector used to link to other devices, or it might be a convention used to allow communication between two software systems.

Inventory In the context of a year 2000 program, the process of determining the components that comprise the agency's systems portfolio. The inventory should include all applications, databases, files, and related system components that will require inspection to locate date data and related date computations.

Julian Date A date in the format CCYYDDD. A date format that contains the year in positions 1 and 4, and the day in positions 5 through 7. The day is represented as 1 through 366, right adjusted, and padded with zeroes on the left. See also **Modified Julian Date**.

Leap Year Leap Year is a year with an additional day (YYYY-02-29). Leap years occur in all years evenly divisible by 400 or in years evenly divisible by 4 and not evenly divisible by 100. For example, the year 1900 was not a leap year but the year 2000 is a leap year.

Lilian Date The number of days since 14 October 1582. 15 October 1582 is Lilian Day 1, 16 October 1582 is Lilian day 2, and so on. (Named for Aloysius Lilius—an advisor to Pope Gregory XIII—who, together with his brother, constructed the current Gregorian calendar.)

Line of Code A single computer program command, declaration, or instruction. Program size is often measured in lines of code.

Metrics Means by which software engineers measure and predict aspects of processes, resources, and products that are relevant to the software engineering activity.

Mission-Critical System A system supporting a core business activity or process.

Modified Julian Date Represents a continuous count of the number of days since November, 17, 1858, according to the National Institute of Standards and Technology (NIST). There are other reference dates, such as January 01, 1601, that are used as the anchor points for these relative or Modified Ordinal Date representations. See also **Julian Date**.

Month-of-Year Month of Year can be expressed as Mon, the alphabetic representation of Month-of-Year using the first three characters of the name of the month. Month of Year is represented by the ordinal numbers 01 through 12, representing the first through the twelfth months.

Object Code The machine code generated by a source code language processor such as an assembler or compiler. A file of object code may be immediately executable or it may require linking with other object code files, such as libraries, to produce a complete executable program.

Operating System The software which schedules tasks, allocates storage, handles the interface to peripheral hardware, and presents a default interface to the user when no application program is running.

Ordinal Date A representation composed of the time elements Year and Day-of-Year. This representation is also referred to as the Julian Date.

Outsourcing Paying another company to provide services which an organization might otherwise have performed itself, such as software development.

Parallel Development A term used to describe two or more separate (non-integrated) development efforts occurring to a single application simultaneously. This might occur, for example, if a maintenance upgrade is needed while a Year 2000 renovation is underway.

Platform The foundation technology of a computer system. Typically, a specific combination of hardware and operating system.

Production Environment The system environment where the agency performs its routine information processing activities.

Project Office See also **Year 2000 Project Office**.

Quality Assurance All the planned and systematic actions necessary to provide adequate confidence that a product or service will satisfy given requirements for quality.

Regression Testing Selective retesting to detect faults introduced during modification of a system.

Renovation The process of making the changes needed to ensure the successful operation of the application for future dates. Renovation covers the conversion of some existing systems and the decommissioning of others, the development of replacement systems, the documentation of changes, and the making of necessary hardware and environmental adjustments. Renovation encompasses internal HUD applications and Customized Off-the-Shelf (COTS) applications. (See also **Implementation** and **Test**.)

Renovation Time The time required to successfully renovate the application.

Risk Assessment A continuous process performed during all phases of system development to provide an estimate of the damage, loss, or harm that could result from a failure to successfully develop individual system components.

Risk Management A management approach designed to reduce risks inherent to system development.

Rolling Window Same as sliding window; see also **Sliding Window**.

Sliding Window A technique to determine the century (high-order digits) of a year when year is represented by only two digits. The user specifies the number of years (both past and future) within a 100-year window spanning two centuries. For example, if the range is 30 years in the past and 69 years in the future, based on the current year of 1997, then the date window is 1967 through 2066. In 1998, the window advances to include 1968 through 2067.

Source Code The form in which a computer program is written by the programmer. Source code is written in a programming language which is then compiled into object code or machine code or executed by an interpreter.

Standard In computing, a set of technical specifications used as a means of establishing uniformity in an area of hardware or software development.

System Testing Testing to determine that the results generated by the enterprise's information systems and their components are accurate and the system performs to specification.

Test The process of exercising a product to identify differences between expected and actual behavior.

Team 2000 Team 2000 consists of HUD's IT technical staff members, HUD's computer system owners, building administrators, business partners, vendors, and Year 2000 technical experts—both government and private sector. Anyone working on the Year 2000 problem at HUD is a member of Team 2000; everyone is working together to ensure that all of HUD's information systems, building systems, and forms can be used successfully in the Year 2000 and beyond. See **Year 2000 Project Office.**

Team 2000 Project Office See **Team 2000** and **Year 2000 Project Office**.

Test Facility A computer system isolated from the production environment dedicated to the testing and validation of applications and system components.

Unit Testing Testing to determine that individual program modules perform to specification.

Utilities Computer programs designed to perform maintenance work on the system or on system components—for example, a storage backup program, a disk or file recovery program, or a resource editor.

Validation The process for testing results of a century-date compliance project to ensure their correctness. It is accomplished by processing a series of tests that show (1) the modified applications or programs correctly handle century dates, and (2) existing functionality has not been adversely affected by the project.

Week-of-Year Of occasional use is Week-of-Year, represented in three positions by the character W followed by the ordinal numbers 01 through 53. Week 01 is defined as the week that has the first Thursday in the New Year. A week starts with Monday, and ends with Sunday. The first week of 1997, for example, would be represented as: 1997-W01.

Year Is represented as four digits with the option of omitting the two high order digits, referred to as century, where century is to be implied.

Year 2000 The impending Year 2000 millennium change and its resulting impact and potential disruptions of business services, information databases, and application systems. Same as **Century Date Change**.

Year 2000 Challenge The work-effort required to complete a Year 2000 transition, to include planning, identifying, reformatting, testing, and migrating phases.

Year 2000 Compliant Being Year 2000 compliant means that HUD's business rules will be computed accurately before, during and after January 1, 2000, regardless of whether the dates were received from the computer's operating platform, from a data repository or from a software application. Not every two digit year representation needs to be changed, and not all four digit years are compliant. The time horizon of the application will determine whether or not four digit years are required. For example, a two digit representation for year is adequate to indicate the print date for a report. If, however, a calculation of AGE employs a date field or if the date field influences the sort sequence of records, then a four digit representation of year is essential. Dates can be represented in different ways to facilitate calculations and display requirements.

Year 2000 Project Office The core HUD Information Technology (IT) project team that coordinates century-date compliance projects across the enterprise. Their responsibilities include communication, skills transfer, tool management, central infrastructure issues, and third-party relationships. IT established the Team 2000 project office under the System Engineering Group (SEG) to minimize exposure to Year 2000 risks by actively assisting and coordinating system renovation efforts throughout HUD. In this effort, the Team 2000 project office addresses critical issues in ensuring that HUD systems perform successfully into the next century. Synonymous with Team 2000 project office. Same as **Team 2000 Project Office**. See **Team 2000**.

Year 2000 Problem The potential problem and its variations that might be encountered in any level of computer hardware or software from microcode to application programs, files, and databases that need to correctly interpret year-date data represented in 2-digit-year format.

Year 2000 Transition The process of revising all programming entities (programs, databases, and so on) to correctly process date data outside the range 1900-1999.

Year-of-Century The term used to identify the representation when Year is truncated to the low order two digits.

Year-of-Decade Is used when Year is truncated to the low order single digit.

YY Format Synonymous with 2-Digit-Year Format.

YYYY Format Synonymous with 4-Digit-Year Format and the CCYY Format.

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